

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application : John Wilhelm Geus, et al.  
Filed : Herewith  
For : CATALYST AND METHOD FOR THE SELECTIVE  
OXIDATION OF SULFUR COMPOUNDS TO  
ELEMENTAL SULFUR  
Attorney's Docket : VER-110AX

Group Art Unit: 1754

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I hereby certify that this correspondence is being deposited with  
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Patents, Washington, D.C. 20231 on \_\_\_\_\_.

By \_\_\_\_\_

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PRELIMINARY AMENDMENT

BOX PATENT APPLICATION  
Commissioner for Patents  
Washington, D.C. 20231

Dear Sir:

Please enter the following preliminary amendments in the  
above-identified application:

In the specification:

**Page 1**, amend the title as follows:

Title: Catalyst and method for the selective oxidation of sulfur compounds to elemental sulfur[, method for the preparation of such a catalyst, and method for the selective oxidation of sulfur compounds to elemental sulfur].

**Page 1**, after the title, before line 1, add the following section:

--CROSS REFERENCE TO RELATED APPLICATIONS

This application claims priority from U.S. Application No. 09/142,309, filed December 7, 1998, the entirety of which is herein incorporated by reference.

BACKGROUND OF THE INVENTION--

**Page 3**, at the end of line 10, after "for the", insert --reverse--.

**Page 5**, before line 1, add the following sub-title:

--BRIEF SUMMARY OF THE INVENTION--

**Page 5**, between lines 21 and 22, insert the following subtitles and paragraphs:

#### --BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 plots the conversion rate of hydrogen sulfide ( $H_2S$ ) to sulfur (S) and the selectivity of an iron oxide catalyst for that oxidation reaction, as a function of catalyst bed temperature;

Figs. 2A and 2B plot, as a function of catalyst bed temperature, the conversion rate of hydrogen sulfide ( $H_2S$ ) to sulfur (S) and the selectivity for that reaction of two iron-zinc oxide catalysts (5 wt. % iron oxide; 10 wt. % zinc oxide), the Fig. 2A catalyst having the iron and zinc ions mixed on an atomic scale, and the Fig. 2B catalyst having;

Fig. 3 shows the Mössbauer spectra of the following: (a) bulk  $ZnFe_2O_4$  as a reference; (b) an iron and zinc citrate solution calcined after drying; (c) a  $Fe(5) Zn(10)SiCl(2)$ ; with 2 wt.% chloride ions; and (d) an iron-zinc oxide catalyst initially lacking chloride ions;

Figs. 4A and 4B show the  $H_2S$ -to-S conversion rate and selectivity of a catalyst in which 5% iron oxide by weight is applied to silicon oxide, with (Fig. 4A) and without (Fig. 4B) the addition of 2% chloride ions by weight; and

Fig. 5 shows, for different catalysts, the lowest possible temperature for maximum  $H_2S$ -to-S conversion, as a function of the number of times the catalyst has been heated to  $320^\circ C$ .

#### DETAILED DESCRIPTION OF THE INVENTION--.

**Page 5**, line 37, delete the word "de" and insert --be--.

**Page 6**, in each of lines 22 and 32, insert: --reversing-- before "Claus reaction".

**Page 14**, line 14, replace "Fig. 2" with --Figs. 2A-2B,--.

**Page 14**, lines 19-20, delete "the left hand portion of Fig. 2" and replace with --Fig. 2A,--.

**Page 14**, lines 21-22, delete "the left-hand portion of the figure" and replace with --Fig. 2A,--.

**Page 14**, line 24, delete "the right-hand figure" and replace with --Fig. 2B,--.

**Page 14**, line 26, replace "Fig. 2" with --Fig. 2B--.

**Page 14**, line 32, replace "Fig. 2" with --Figs. 2A and 2B--.

**Page 14**, lines 33-34, replace "the left-hand portion of the figure" with --Fig. 2B,--.

**Page 14**, line 35, delete "the temperature than does that in the right-hand figure" and replace with --temperatures above 240°C than does the selectivity of the Fig. 2B catalyst--.

**Page 14**, line 36, before "catalyst", insert --Fig. 2A--.

**Page 14**, lines 36-37, delete "whose data are shown in the left-hand portion of the figure".

**Page 15**, line 11, after " $\text{ZnFe}_2\text{O}_4$ ", insert --(spectrum "a")--.

**Page 15**, line 13, after "drying", insert --(spectrum "b")--.

**Page 15**, line 14, after "spectrum", insert --"d"--.

**Page 15**, line 26, replace "Fig.2" with --Fig. 2A,--.

**Page 15**, line 32, replace "Fig.3" with --Figs. 4A and 4B,--.

**Page 15**, line 36, after "left", insert --, Fig. 4A,--.

**Page 16**, line 1, after "on the right", insert -- in Fig.4B,  
the results--.

In the claims:

Please cancel claims 2-14, without prejudice or disclaimer.

Remarks

Dependent claims 2-14 are hereby cancelled without prejudice or disclaimer. Kindly calculate the filing fee based on the amended claims. However, Applicants will shortly file a second Preliminary Amendment to put the claims further in condition for examination, and thus request that the Examiner hold of examining this application until then.

Respectfully submitted,

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